

DOCUMENT-IDENTIFIER: US 5832387 A
TITLE: Adaptive power allocating method and apparatus for multicarrier transmission system

DEPR:

To secondly determine the transmission power, the second power determiner 710 searches the subchannels having a transmission power exceeding $P_{sub.x}$, which is the maximum transmission power limit defined as the maximum power value at a given frequency band $f_{sub.x}$ (step 404). For step 404, $P_{sub.x}$ of each subchannel is input via an input terminal IN3. If step 404 is satisfied, $P_{sub.x}$ is redetermined as the transmission power of the corresponding subchannel. After subtracting $P_{sub.x}$ which is the transmission power value of the subchannels, the remaining power is distributed to the subchannel having the highest transmission power among the subchannels whose transmission power is not over the $P_{sub.x}$, within the range of the maximum transmission power limit of the corresponding subchannel at the given frequency band $f_{sub.x}$, to perform the second redetermination (step 406). After step 406, the SNR of each subchannel is recalculated and if the SNR is a negative value, the transmission power of the subchannel is thirdly redetermined (step 408). After step 408, power controller 712 receives the output of second power determiner 710. Power controller 712 generates a control signal for controlling the transmission power of each subchannel output from carrier transmitter 700 to be equal to that provided from second power determiner 710.

DOCUMENT-IDENTIFIER: US 5566165 A

TITLE: Transmission power control method and a communication system using the same

DEPR:

The maximum power calculation portion 13 calculates the maximum power $P_{\text{sub.max}}$ as follows: First, the received power S at the base station is expressed by the following equation. ##EQU1## where SNR is a noise-to-signal ratio of the desired received power to noise power including the interference power, for satisfying a predetermined quality (error rate), $N_{\text{sub.0}}$ is a power density of thermal noise, $T_{\text{sub.S}}$ is a symbol interval of information data, pg is a processing gain, C is the capacity in terms of the number of subscribers per cell, and α is a ratio of interference power from other cells to that of the cell of interest. The received power S at the base station can be obtained by the following equation derived from equation (1). ##EQU2##